

**CLAIMS**

We claim:

1. An gauge-based instrument for measuring the sound pressure within a vehicle comprising:

a cylindrical gauge housing, said cylindrical gauge housing having a front portion, a rear portion and a diameter, said front portion constructed and arranged for securement of a faceplate;

a faceplate, said faceplate having sound pressure level markings thereon, said markings being visible through said front portion of said housing;

a gauge motor disposed adjacent to said faceplate;

a signal processing means for receiving a signal indicative of the sound pressure level within said vehicle, said circuit controlling said gauge motor based on said signal;

a pointer extending out of said gauge motor and movable by said gauge motor;

wherein said sound pressure level gauge is mountable within a standard gauge mount.

1           2. A vehicular sound pressure instrument as set forth in  
2 claim 1 including a pointer light source to emit light through  
3 said pointer as said pointer is pivoted by said gauge motor.  
4

5           3. A vehicular sound pressure instrument as set forth in  
6 claim 2 wherein said light source is chosen from a group  
7 consisting of light bulbs, Light Emitting Diodes and Electro-  
8 luminescence, wherein said light source emits light of a  
9 different wavelength such that said light source can be used  
10 to identify different sound level conditions.  
11

12           4. A vehicular sound pressure instrument as set forth in  
13 claim 1 wherein said signal processing means is adapted to  
14 store a peak sound pressure level during operation of said  
15 vehicle;

16           wherein said peak sound pressure may be recalled and  
17 displayed on said faceplate during and after operation of said  
18 vehicle.  
19

20           5. A vehicular sound pressure instrument as set forth in  
21 claim 4 wherein said front portion of said cylindrical gauge  
22 housing is constructed and arranged to include a rotating  
23 bezel, said rotating bezel having a larger diameter than said  
24 cylindrical housing diameter;

25           wherein rotation of said bezel in a first direction  
26 recalls said peak sound pressure level and rotation of said

1 bezel in a second direction resets said peak sound pressure to  
2 zero.

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4 6. A vehicular sound pressure instrument as set forth in  
5 claim 4 wherein said faceplate is constructed and arranged to  
6 include at least one switch;

7 wherein operation of said at least one switch in a first  
8 mode recalls said peak sound pressure level and operation of  
9 said at least switch in a second mode resets said peak sound  
10 pressure to zero.

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12 7. A vehicular sound pressure instrument as set forth in  
13 claim 1 wherein said faceplate markings indicate decibels.

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15 8. A vehicular sound pressure instrument as set forth in  
16 claim 1 wherein said faceplate includes a digital display for  
17 digitally indicating said sound pressure level within said  
18 vehicle.

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20 9. A vehicular sound pressure instrument as set forth in  
21 claim 5 wherein said rotating bezel includes a rubber cover for  
22 isolating said vehicular sound pressure instrument from  
23 unwanted vibration and aesthetically enhancing said rotating  
24 bezel.

1           10. A vehicular sound pressure instrument as set forth in  
2 claim 1 wherein said cylindrical housing is constructed and  
3 arranged for mounting in a pod type gauge cluster mount;  
4           wherein said pod type gauge cluster mount is adapted to  
5 mount on the A-pillar of said vehicle.  
6

7           11. A vehicular sound pressure instrument as set forth in  
8 claim 1 wherein said cylindrical housing is constructed and  
9 arranged for mounting in a cup type gauge mount;  
10          wherein said cup type gauge mount is adapted to mount on  
11 the dash of said vehicle.  
12

13          12. A vehicular sound pressure instrument as set forth in  
14 claim 1 wherein said cylindrical housing is constructed and  
15 arranged for mounting in a panel type gauge cluster mount;  
16          wherein said panel type gauge cluster mount is adapted to  
17 mount on the dash of said vehicle.  
18

19          13. A vehicular sound pressure instrument as set forth in  
20 claim 1 wherein said circuit means includes at least one  
21 microphone, said microphone being positioned at about ear level  
22 within said vehicle, said microphone constructed and arranged  
23 for electrical communication with said signal processing means.  
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1           14. A vehicular sound pressure instrument as set forth in  
2 claim 13 wherein said faceplate is adapted to secure said  
3 microphone.

4  
5           15. A vehicular sound pressure instrument as set forth in  
6 claim 1 wherein said sound pressure level instrument includes  
7 a backlighting source, said backlighting source emitting light  
8 such that said light is reflected within said cylindrical  
9 housing and refracted out of said front portion of said  
10 cylindrical housing.

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12           16. A vehicular sound pressure instrument as set forth in  
13 claim 15 wherein said backlighting source is chosen from a  
14 group consisting of light bulbs, Light Emitting Diodes and  
15 Electro-luminescence, wherein said backlighting source emits  
16 light of a different wavelength such that said backlighting  
17 source can be used to identify different sound pressure levels.

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19           17. A vehicular sound pressure instrument as set forth in  
20 claim 1 wherein said cylindrical housing diameter is about two  
21 and one-sixteenth inches.

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23           18. A vehicular sound pressure instrument as set forth in  
24 claim 1 wherein said cylindrical housing diameter is about two

1 and five-eighths inches.

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3 19. An instrument for measuring the sound pressure level  
4 within a vehicle comprising:

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6 a cylindrical gauge housing, said cylindrical gauge  
7 housing having a front portion, a rear portion and a diameter,  
8 said front portion constructed and arranged for securement of  
9 a faceplate;

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11 a faceplate, said faceplate having sound pressure level  
12 markings thereon, said faceplate adapted to secure a plurality  
13 of light emitting diodes positioned with respect to said sound  
14 pressure level markings, said markings and said light emitting  
15 diodes being visible through said front portion of said  
16 housing;

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18 a signal processing means for receiving a signal  
19 indicative of the sound pressure level within said vehicle,  
20 said signal processing means controlling operation of said  
21 plurality of light emitting diodes based on said signal;

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23 wherein said sound pressure instrument is mountable  
24 within a standard gauge mount.

1           20. A vehicular sound pressure instrument as set forth in  
2 claim 19 wherein said circuit means is adapted to store a peak  
3 sound pressure level during operation of said vehicle;

4           wherein said peak sound pressure level may be recalled and  
5 displayed on said faceplate during and after operation of said  
6 vehicle.

7  
8           21. A vehicular sound pressure instrument as set forth in  
9 claim 20 wherein said front portion of said cylindrical gauge  
10 housing is constructed and arranged to include a rotating  
11 bezel, said rotating bezel having a larger diameter than said  
12 cylindrical housing diameter;

13           wherein rotation of said bezel in a first direction  
14 recalls said peak sound pressure level and rotation of said  
15 bezel in a second direction resets said peak sound pressure to  
16 zero.

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18           22. A vehicular sound pressure instrument as set forth in  
19 claim 20 wherein said faceplate is constructed and arranged to  
20 include at least one switch;

21           wherein operation of said at least one switch in a first  
22 mode recalls said peak sound pressure level and operation of  
23 said at least one switch in a second mode resets said peak  
24 sound pressure to zero.

1           23. A vehicular sound pressure instrument as set forth in  
2 claim 19 wherein said faceplate markings indicate decibels and  
3 said light emitting diodes are progressively activated with  
4 respect to sound pressure levels within said vehicle.

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6           24. A vehicular sound pressure instrument as set forth in  
7 claim 19 wherein said faceplate includes a digital display for  
8 digitally indicating said sound pressure level within said  
9 vehicle.

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11           25. A vehicular sound pressure instrument as set forth in  
12 claim 21 wherein said rotating bezel includes a rubber cover  
13 for isolating said sound pressure instrument from unwanted  
14 vibration and aesthetically enhancing said rotating bezel.

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16           26. A vehicular sound pressure instrument as set forth in  
17 claim 19 wherein said cylindrical housing is constructed and  
18 arranged for mounting in a pod type gauge cluster mount;

19           wherein said pod type gauge cluster mount is adapted to  
20 mount on the A-pillar of said vehicle.

21

22           27. A vehicular sound pressure instrument as set forth in  
23 claim 19 wherein said cylindrical housing is constructed and  
24 arranged for mounting in a cup type gauge mount;



1        wherein said cup type gauge mount is adapted to mount on  
2 the dash of said vehicle.

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4        28. A vehicular sound pressure instrument as set forth in  
5 claim 19 wherein said cylindrical housing is constructed and  
6 arranged for mounting in a panel type gauge cluster mount;

7        wherein said panel type gauge cluster mount is adapted to  
8 mount on the dash of said vehicle.

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10       29. A vehicular sound pressure instrument as set forth in  
11 claim 19 wherein said circuit means includes at least one  
12 microphone, said microphone being positioned at about ear level  
13 within said vehicle, said microphone constructed and arranged  
14 for electrical communication with said circuit means.

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16       30. A vehicular sound pressure instrument as set forth in  
17 claim 29 wherein said faceplate is adapted to secure said  
18 microphone.

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20       31. A vehicular sound pressure instrument as set forth in  
21 claim 19 wherein said sound pressure level instrument includes  
22 a backlighting source, said backlighting source emitting light  
23 such that said light is reflected within said cylindrical  
24 housing and refracted out of said front portion of said

1 cylindrical housing.

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3        32. A vehicular sound pressure instrument as set forth in  
4 claim 31 wherein said backlighting source includes a plurality  
5 of light bulbs wherein each of said plurality of light bulbs  
6 emits light of a different wavelength such that each of said  
7 plurality of light bulbs can be used for different sound  
8 pressure levels to identify said different sound pressure  
9 levels.

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11        33. A vehicular sound pressure instrument as set forth in  
12 claim 19 wherein said cylindrical housing diameter is about two  
13 and one-sixteenth inches.

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15        34. A vehicular sound pressure instrument as set forth in  
16 claim 19 wherein said cylindrical housing diameter is about two  
17 and five-eighths inches.

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